

Curriculum Availability, Variations, and Their Implications across U.S. High Schools

A Senior Honors Thesis

Presented in Partial Fulfillment of the Requirements for
graduation with *research distinction* in Sociology in the
undergraduate colleges of The Ohio State University

by

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June 2008

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ABSTRACT

Significant social class and race variations across the United States in school quality and resources have been well documented in the social science literature. This study contributes to this body of work by investigating differentiation in curricular availability. While some prior work has shown significant curricular opportunity differences *within* schools (i.e. through tracking), this project considers whether curricular availability itself varies *across* schools. My analyses focus on variations in the availability and use of college-preparatory and vocational courses. Most centrally, I examine whether differences in the curriculum offered at a school are related to the social class and racial composition of the student body, but also type of locality (i.e., rural, urban, suburban) and school (i.e., public or private). Findings suggest significant school inequalities in curricular options nationally. Most importantly, the race and social class makeup of a school hold important implications for the type of curriculum made available to students and enrollment behaviors. Students attending predominantly poor schools are less likely to have access to the challenging, advanced placement coursework needed to compete academically at the collegiate level as well as later in the workforce. Curricular opportunities at particularly poor schools are more likely than others to be geared to vocational education. Interesting variations in educational options are also noted across rural, inner city, and suburban schools. Education and social science scholars have, time and again, found considerable evidence that curriculum type and rigor have meaningful implications for both immediate academic achievement and life trajectory. The findings of this project, therefore, suggest an alarming differentiation in the opportunities given to students based not only on where they attend school, but also the racial and economic characteristics of the school they attend.

INTRODUCTION

Despite American declarations of equal opportunity and success for all, research across various social science fields has made clear significant social class and race variations across the U.S. in school quality and resources (e.g., Orfield and Yun 1999; Roscigno, Tomaskovic-Devey, Crowley 2006). Although much work has focused on tangible resource differences across poor and non-poor schools, less attention has centered on the potential for curricular differences – curricular differences that likely hold implications for students’ future employment and educational prospects. This study aims to fill a void in the research on differences between schools. It seems unlikely that all students in a predominantly white, upper-class, suburban school are, by nature, more gifted and capable than all those in a racially segregated, poor, urban

school on the other side of town. Undoubtedly, differences in ability exist between students. Yet, schools, particularly public schools, should offer relatively similar curricula and, thus opportunity, to their student bodies. This project contributes to the literature on the sorting of students by providing research on cross-school differences.

My analyses focus on and analyze school level variations in curricula across the United States, drawing from nationally representative data and using OLS regression techniques. Most centrally, I examine relations with school social class and racial composition, but also differences by public-private and type of locality (i.e., rural, urban, suburban). As I note in my concluding discussion, this discussion and accompanying analyses contribute to both the wide body of literature on educational opportunity and policy discussions pertaining to education and inequality.

THE LITERATURE

Effects of Curriculum

Few have challenged the “considerable evidence that high school curriculum differentiation has important implications for students’ school experiences and academic achievement” (Alexander and Cook 1982:1). Hence, curriculum matters. Numerous studies have affirmed that the students in the highest, college preparatory tracks accrue the greatest advantages academically (Natriello, Pallas, and Alexander 1989; Jencks and Brown 1975). Much of this research was conducted in reaction to the publication of *A Nation at Risk: The Imperative of Educational Reform* by the federal government in 1983 in which challenging academics, such as advanced sciences, math, and English, were stressed to be the fundamental essence of curricula for all students (McPartland and Schneider 1993).

The college-preparatory advanced track by far produces greater academic achievement than general track courses, and likewise the general track positively influences achievement more so than the vocational track (Natriello, Pallas, and Alexander 1989). Student achievement, as measured by the standardized test scores of seniors in a variety of subjects, has been found to be significantly related to the number and rigor of academic courses taken in high school (Schmidt 1983; Alexander and Pallas 1984). While students in advanced courses learn critical thinking skills and develop an understanding of complex mathematical concepts, those of a similar aptitude and ability but in lower, general or vocational tracks are “exposed to a limited, rote-oriented curriculum” (Darling-Hammond 2000:276). Despite their comparable potential, students in the lower tracks ultimately perform worse on achievement tests based entirely on their curricular experiences (Oakes 1990; Gamoran and Mare 1989).

The well known achievement gap between White and minority students, particularly African Americans, is substantially narrowed when students have “similar course taking records” (Darling-Hammond 2000:275). This fact disproves any insinuation of natural racial differences in ability. Instead it becomes apparent that the curriculum a student enrolls in shapes, and to an extent, predicts academic success.

In addition to achievement and experiences within the classroom, the type and quality of curriculum offered to a student affects opportunities throughout life. The courses a student enrolls in may, in fact, be the greatest predictor of post graduation aspirations, plans, and overall success (Oakes 1983). “Studies of high school graduates show that among individuals with the same degrees, those with higher levels of skill increasingly have greater earning capacity,” demonstrating that it is not just having the degree that matters, but the content and rigor of one’s curriculum that has value in the job market (Darling-Hammond 2000: 265).

By design, vocational education prepares students for jobs upon graduation from high school (Oakes 1983), thereby leaving such students under- or unprepared for college. Despite historical aims at improving opportunities for poor and minority students through vocational education, today it appears that such curricula may be “a means of sorting these students into programs that limit their future opportunities and, in fact, relegate them to low-level occupations and social status” (Oakes 1983:328). Meanwhile those in academic curricula are encouraged to pursue a college education and more highly regarded profession. Even should a graduate of a college-preparatory curriculum fail to enroll in a college or university, the skills acquired through challenging coursework will enable him or her to attain a decent paying job, more so than the student limited to the vocational program. Such long lasting curricular effects make it is easy to see how the curriculum a student is offered determines his or her future trajectory.

Curricular Differences Within Schools

Although research on curricular differences across schools is meager, there has been extensive research on differentiation within schools, the phenomenon often referred to as tracking.

Traditionally, vocational programs were created as a complement to the conventional academic lessons (Oakes 1983). However, tracking very quickly developed into a practice of differentiation. As immigration rose in the late nineteenth and early twentieth century, “the differentiated curriculum allowed students to be educated in ways relevant to their future social, economic, and occupational roles,” as well as be socialized into American society (Lucas 1999). The practice of tracking has developed into a means of sorting students by ability, or often deemed ability, and pairing groups with what is considered to be the appropriate level of educational rigor.

Concerns resulting from the civil rights movement of the 1950s and 1960s rid many schools of overarching rigid curricular programs (Lucas 1999). However, tracking prevailed. Today students are tracked into individual courses at distinct levels. “Thus, the overarching programs were dismantled, but the foundational element of tracking, the differentiated curriculum, remained” (Lucas 1999:6).

Today the typical school prepares only one fifth of its students for what Darling-Hammond (2000:265) defines as “thinking work.” While a select group of students are challenged to engage in critical thinking and apply concepts, others are learning “lower order ‘rote’ skills,” only learning to memorize and repeat information in a routine fashion (Darling-Hammond 2000:280). Unfortunately, despite pedagogical intentions, this practice of grouping and labeling students has created meaningful implications for racial and socioeconomic inequality.

Numerous educational and social science scholars have “suggested that an underlying function of vocational education has been to segregate poor and minority students into occupational training programs in order to preserve the academic curriculum for middle- and upper-class students” (Oakes 1983:333). This suggestion is based on years of analyses of educational tracking by race and socioeconomic background. Indeed, much work has demonstrated race and social class to be a major determinant of placement (e.g., Oakes 1983; Darling-Hammond 2000, etc.). Those placed in vocational or general classes, when the opportunity exists within a school for higher learning, are frequently students of lower socioeconomic statuses compared to those placed in advanced classes (Oakes 1983; Oakes and Guiton 1995). Likewise, minority students are rarely found in academically challenging courses, such as AP classes (Darling-Hammond 2000). The same trends are found even when test scores

are controlled for, suggesting the overarching influence non-academic characteristics such as race and socioeconomic status have on curricular track placement (Darling-Hammond 2000).

Some scholars have suggested that this stratifying function of tracking is intentional by organization. The stratification view of curricular differentiation suggests that by design, tracking works to reinforce existing inequalities by “segregating [disadvantaged groups] into lower-paid and lower-status positions, and then legitimizing this allocation on grounds of merit and ability” (Grubb and Lazerson 1992: 131; Oakes 1983). Whether or not the educational institution seeks to maintain the status quo through tracking, nevertheless the inequalities that have resulted from the practice demonstrate a “widely held belief that few American students – particularly low-income, minority, and immigrant students – are really capable or interested in rigorous academic work” (Oakes and Guiton 1995:7). Meanwhile, the academic track with the most rewards has been maintained almost exclusively for non-minority and middle- to upper-class students (Oakes 1983).

Differences Across Schools

This project asks whether schools themselves vary in the curricular choices offered to students. Research has been relatively silent on this point, although we know from prior work that schools both across and within districts, differ in funding, in student body composition, and in organization (Condrón and Roscigno 2003). If such variations exist in these other realms, it is quite reasonable to suspect that curricula may likewise differ. Given the significance curriculum has for achievement, both in and out of high school, it is important to empirically explore possible differences between schools.

Schools vary in student body composition along both ethnic and economic lines. In fact, schools have become increasingly more segregated, a move away from the integrated and diverse schools created after mandates resulting from *Brown vs. Board of Education of Topeka (1954)*. The Civil Rights Project at Harvard University notes that schools are segregated today at a level not seen since before 1968 prior to desegregation efforts (Kozol 2005:19). According to Linda Darling-Hammond's research (2000:267), "nearly two-thirds of minority students attend predominantly segregated schools, most of which are in central cities." Such segregation in schools and therefore differentiation in the make-up of student bodies facilitates inequality. Variation by nature allows for systematic ranking, by which some schools, and therefore students, may be deemed more or less worthy of a quality rigorous education. For example, we know that high schools in which the majority of students are African American are the least likely to offer a challenging curriculum that will prepare graduates for opportunities after graduation (Darling-Hammond 2000).

Research has demonstrated significant variations in funding across schools. Per-pupil spending differs from state to state, district to district, and even from school to school within districts. Having controlled for relative costs, in the 1995-96 school year, for example, \$3,867 was spent on the average student in Utah while at the other extreme, New Jersey spent \$9,955 per-pupil (Ladd & Hansen 1999:29). In addition to variations in spending across states, there are often great disparities in financial resources across schools within a state, and even across those within the same district (Ladd & Hadden 1999). Within districts, schools with higher concentrations of minority and economically disadvantaged students "sometimes receive lower allocations of both money and other education resources" (Ladd & Hansen 1999:31, Darling-Hammond 1995). The inadequacy of funds for such schools translates into insufficient class

materials and equipment, as well as the absence of highly sought-after teachers that are able to teach the most advanced courses (Darling-Hammond 2000). Disparities in funding directly influence the differentiation in curricula that the premise of this project rests on.

Schools differ also in resources ranging from class materials to building facilities, however, most importantly school differ in their teaching staff. Well qualified teachers are distributed unevenly most of all. Several studies on funding and resource allocation in the state of New York found that “by virtually any resource measure state and local dollars per pupil, student-teacher ratios and student-staff ratios, class sizes, teacher experience, and teacher qualifications—districts and schools with greater proportions of poor and minority students receive fewer resources than others” (Darling-Hammond 2000: 268). Challenging college-preparatory classes, such as Advanced Placement courses, are unlikely to be offered in poor schools either in rural or urban areas because these schools simply lack the resources to compete for the qualified teachers capable of developing such courses (Darling-Hammond 2000: 275).

Given variations across schools in student body composition, funding, and educational resources, in addition to the extensive research on the prevalence of tracking within schools addressed earlier, expectations of curricular differences across schools are well founded. Jeannie Oakes (2005:xi) suggests that low-income and minority students continue to suffer academically “because they are tracked disproportionately into the lowest classes in racially mixed schools,” as has been discussed in the tracking literature, but “also because they are more likely to attend racially isolated schools where lower-level classes predominate.” The known implications curriculum has on a student, both for immediate achievement and one’s life trajectory, makes it important and necessary to study potential differences in curriculum across schools.

By and large, schools across the U.S. offer comprehensive general curricula. However, not every school is alike. Some high schools tailor learning more heavily around vocational programs, while others focus on an academically rigorous curriculum (Oakes 1990). Disturbingly, several studies have found these curricular differences to be tied to the racial and socio-economic characteristics of schools and their communities (Oakes 1990; Gamoran 1987). The differences in opportunities that exist for students of divergent backgrounds are directly tied to the curricular offerings at the schools they attend (Gamoran 1987:153). Although the literature has addressed school-level curricular variations significantly less thoroughly than within school variations, several key studies are worth noting.

Gamoran (1987) found that the positive relationship between socio-economic status and student achievement is explained almost entirely by an increased likelihood middle- and upper-class students have of attending schools where a greater percentage of students are enrolled in the academic track. Gamoran's findings indicate that the school context, meaning its curricular setting and student composition, is more influential on achievement than individual student background. "Thus, high-SES students achieve more because they have more advantaged school experiences" (Gamoran 1987:142). They are more likely to succeed academically because they are more likely to take advanced courses; and likewise they disproportionately take more advanced courses because such courses are more likely to be offered at their schools. Notably, while he found a significant relationship between economic background and achievement, this particular work did not simultaneously consider possible racial disparities.

Conversely, several studies by Oakes have addressed ties between race and curriculum. In a study of vocational programs, Oakes (1983) found significant differences in the subject matter of vocational courses for white and minority students. Within the sample, "students at

white schools had considerably more extensive business and industrial arts programs available to them and considerably more restricted programs in trade preparation than did students attending nonwhite or mixed schools” (Oakes 1983: 344). This finding suggests vocational courses are considered to be complementary to the education of white students but as training for post-graduation low-skill occupations for minority students. Additionally, within the business courses offered, those focusing on management skills were more prevalent at predominantly white schools, whereas courses on “clerical skills such as typing, shorthand, bookkeeping, and office procedures” were more often offered at the multiracial or heavily minority schools (Oakes 1983:345).

A final study on curricular differences across schools worth noting is a case study conducted by Jeanie Oakes and Gretchen Guiton (1995). The study examined the curricula of three high schools in adjacent communities on the West Coast. Oakes and Guiton find that the high school with a middle-class student body, almost entirely comprised of White and Asian adolescents, offered a much more diverse, rich curriculum of both advanced academic and vocational courses than did the racially mixed school or the predominantly African American and Latino high school. In fact, “even those students in the top 25% of their class at [the largely minority school] had a greater probability of concentrating in vocational courses there than their counterparts at the more advantaged schools” (Oakes and Guiton 1995: 16). In real figures, “42% of the top scoring African Americans” at this school took at a minimum six vocational courses whereas only 9% of similar students at the racially diverse school had schedules so heavily weighted towards vocational education (Oakes and Guiton 1995: 16).

An array of other studies have produced similar findings with regard to the correlation between the level of curriculum offered in a school and the racial and socio-economic

composition of the student body. Overall, “schools serving predominantly minority and poor populations offer fewer advanced and more remedial courses in academic subjects, and they have smaller academic tracks and larger vocational programs” (Darling-Hammond 2000:275). The few largely minority and low-income populated schools that do offer college preparatory classes offer them only to a small select group of students (Darling-Hammond 2000). Most African-American, Hispanic, and American Indian students as well as certainly just about all economically disadvantaged students have been unfairly confined to vocational and general curriculum courses and left in a dead-end track (Oakes 1990).

Below I address whether some schools disproportionately offer upper end (e.g., Advanced Placement) courses, explicitly intended to prepare students for higher education. Conversely, it may be the case that lower-level vocational curricula are, in fact, more likely to be offered at poor, largely minority schools, as Oakes and others suggest. How do schools differ in curriculum, and are the variations we find associated with the compositional attributes of student bodies themselves? And, might there likewise be significant differences by the type of locality in which the school is embedded? These are the core questions my research addresses.

DATA and METHODS

This study draws from the National Educational Longitudinal Survey (NELS) of 1988, a data set collected by the U.S. Department of Education’s National Center for Education Statistics (NCES). NELS is a rich, nationally representative data set of high school students in the U.S. and the schools they attend. A strength of the data is the large sample size which includes a random sample of over 20,000 students drawing from between 8,773 and 10,288 schools, depending on the outcome of interest. Data was collected at multiple levels, including the student, teacher,

parent, and school administrator components. This study draws on the school administrator component, wherein information pertaining to the schools, its students, and curricular options was gathered. NCES began collecting data in 1988 when the students were in eighth grade and followed up with bi-annual questionnaires until 1994 and a final questionnaire in 2000. This study uses data from the first year follow-up, collected when the target students were in the tenth grade, though responses about curriculum and school characteristics reflect the entire school as reported in the principal component.

Measurement

The range and scope of detailed indicators provided in the NELS data set are ideal for addressing the questions posed in this project. Table 1 reports the descriptions, means, and standard deviations of each variable. Curriculum availability and enrollment behavior is the outcome of interest and is reflected by measures of the number of Advanced Placement (AP) classes, the percentage of students enrolled in college-preparatory courses, and the percentage of students in vocational or technical programs. My principal interest centers on the relations between the racial and economic composition of a school and curriculum availability and use.

Number of AP classes represents the number of courses offered at a school, as reported by the principal. At the time of data collection, the College Board offered thirty exams in different subject areas, and so this number was used to cap any responses greater than the possible maximum value (The College Board 1997). The percent of students in college-preparatory classes is broadly defined, and not limited to only AP courses as offered by the

Table 1. Descriptions, Means, and Standard Deviations for Variables

Variable	Description	Mean	SD
<i>Curriculum Availability:</i>			
Number of AP courses	Number of Advanced Placement courses, across all subjects, offered at the school	5.09	5.29
Percent in College-Prep	Percent of 10 th grade students enrolled in college-preparatory and/or academic instructional program	53.58	28.50
Percent in Vocational	Percent of 10 th grade students enrolled in at least one of the following vocational instructional programs: agricultural, business, technical, trade	12.07	18.84
<i>School Characteristics:</i>			
Race composition: Percent non-white	Percent of the student body that is non-white	42.57	30.87
Class composition: Percent on free or reduced-price lunch	Percent of the student body that qualifies for free or reduced-price lunch by family income	21.74	21.33
<i>Controls:</i>			
School Type	Standing of school as either public or private, where public is the default	.13	.33
Locality: Urban	Locale of school in either urban, rural, or suburban municipality, where suburban is the default	.28	.45
Locality: Rural	Locale of school in either urban, rural, or suburban municipality, where suburban is the default	.30	.46
School Size	Total school enrollment	1194.27	751.36

College Board. The percent of students in vocational classes was constructed from several measures that independently measured involvement in distinct vocational areas. The vocational education variable was created to include students enrolled in business, agriculture, technical, and vocational courses.

The independent variables are rather straight forward. The percent of non-white students at the schools was computed as the opposite of the original variable, which measured percent of

white students. The percent of students on free or reduced-price lunch is used to measure social class. The qualification for free or reduced-price lunch is commonly used in the social sciences as the conventional means of classifying respondents as either poor or not poor. It reflects the extent to which a school serves economically disadvantaged students. Model 1 of the regression analysis looks solely at the effect of these two variables on curriculum.

Several controls are used to account for intervening relationships. First, school type is considered. This categorical variable indicates whether a school is public or private, with public being the default response. Secondly, locality is taken into consideration. Two variables were created, rural and urban, both of which indicate locality with reference to suburban as the default response. Finally, school size is accounted for as a control variable, and is simply measured as the total student enrollment size. These control variables are introduced into the regression analyses in Model 2. Changes in race and social class composition effects between the Models 1 and 2 are likely indicative of relations with public/private and urban/rural/suburban differences in opportunity, and are interpreted as such.

ANALYSES and RESULTS

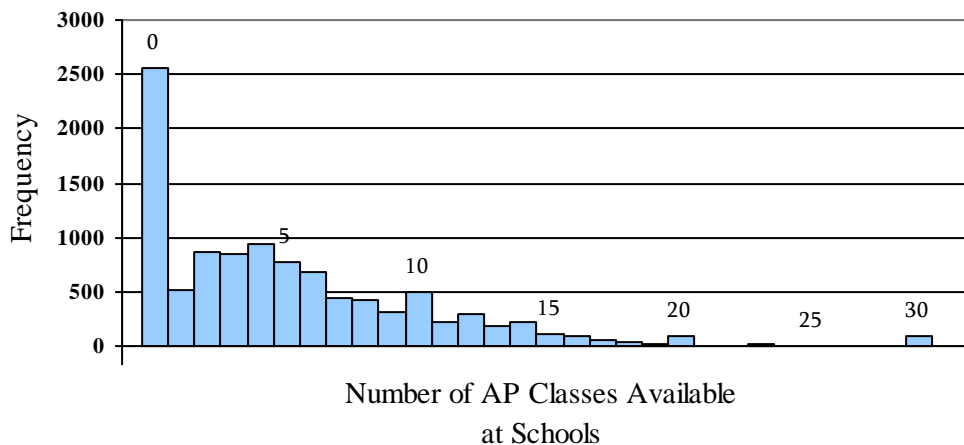
I begin by analyzing the extent to which high school curricula are a function of the racial and socio-economic composition of the student body. I then incorporate other variables into the analysis, including the type of school as either public or private, the location of the school in an urban, suburban, or rural area, and the student enrollment size, in order to account for possible intervening relationships.

Descriptive Statistics

The data show a great deal variation in the curriculum at high schools across the United States.

The number of AP classes made available at a school ranged from 0 to 30, with an overwhelming concentration of schools at the extreme that offer not a single AP class. Figure 1 portrays this incredible variation. There also was great variation in the percentage of students enrolled in academic college-preparatory programs with a standard deviation of 28.50 around the mean of 53.38 percent of students enrolled. The percent of students in vocational programs was more heavily skewed to smaller figures, though great variation did exist. Indicators of race and class composition vary greatly, with the racial diversity of schools varying to a greater extent than the socio-economic composition of schools.

Figure 1. Variation in the Availability of AP Classes



Associational and Regression Findings

Associational analyses, reported below in Table 2, speak to the relationships between both minority and poor student populations and the three curricular outcomes of interest. Generally, AP availability appears to be diminished in low socioeconomic schools. Students in such schools are thus less likely to be enrolled in college preparatory coursework and are, instead, more likely to be enrolled in vocational education courses. Interesting, although it appears that AP coursework is more commonly available in high minority concentration schools, students appear to be unlikely to be enrolled in such courses and are more likely, like their poorer counterparts, to be in vocational education classes.

Table 2. Associations between Race/Class Composition and Curriculum.

	# AP Offered	% in College-Prep	% in Vocational
Percent Non-white	.131**	-.120**	.053**
Percent on Free or Reduced Price Lunch	-.136**	-.382**	.152**

** Correlation is significant at the 0.01 level (2-tailed)

The Role of Race

Table 3 reports regression results, wherein race and social class composition are considered simultaneously, and then alongside other attributes of schools. Contrary to my initial hypothesis, the relationship between the percent of non-white students at a school and the number of AP classes offered is positive. This positive regression coefficient in model 1 suggests that with social class accounted for, heavily minority schools are likely to offer a slightly greater number of AP classes than other schools. Though not reported in the table, when a regression equation is estimated solely with race, this relationship remains positive though is cut in half. This suggests

Table 3. Regression Coefficients of School Characteristics on the Availability of AP Courses and the Percentages of Students enrolled in College-Preparatory and Vocational Courses¹

	<u># of APs Offered</u>		<u>% in College-Prep</u>		<u>% in Vocational</u>	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
% Non-white	.04(.23)***	.01(.03)**	.03(.03)**	-.07(-.07)***	.01(.01)	.02(.04)**
% Free or reduced lunch	-.06(-.24)***	-.03(-.14)***	-.56(-.40)***	-.24(-.17)***	.14(.15)***	0.0(0.0)
Private		2.01(.13)***		38.80(.49)***		-11.92(-.22)***
Urban		.07(.01)		-1.31(-.02)		3.23(.08)***
Rural		-.60(-.05)***		-4.85(-.08)***		7.26(.18)***
School Size		0.0(.36)***		.01 (.13)***		0.0(.04)*
Intercept	4.83	2.54	64.25	52.04	9.18	8.78
Adjusted R ²	.06***	.17***	.15***	.34***	.02***	.09***
Sample Size	9,468	9,468	8,089	8,089	7,999	7,999

¹Unstandardized coefficients reported with standardized coefficients in parentheses.

*p<.05, **p<.01, ***p<.001

that because race and class are heavily intertwined, the regression coefficient for the relationship between percent non-white and the number of AP classes would not be as strong if social class had not been considered in the same model.

The impact of race composition is further complicated when examining not curricular availability in the form of AP courses, but curricular usage. The initial effect of race on participation in college-preparatory courses is reversed, suggesting a disadvantage in actual course-taking. Opposite effects of heavily minority student bodies on the number of AP classes and the percentage of students enrolled in college-preparatory classes suggests that may offer college-preparatory opportunity (or claim to), yet students are failing to take advantage of it.

Several possibilities exist for the relations uncovered above. First, principals at these largely minority schools may be over-reporting the actual number of AP classes staffed and offered as a real piece of the school curriculum. Secondly, pressure from racial equality advocates and educators may have worked to improve the opportunity structure in racially mixed and heavily minority schools. It has been suggested that this may be the case particularly in urban centers in the Northeast (Roscigno, Tomaskovic-Devey, and Crowley 2006). The control model also shows that a significant portion of the race effect is due to the heavy concentration of minority students in both public and urban schools. This public school and urban locality disadvantage adversely affects students at largely non-white schools. Finally, these classes may in all truth be real options in the curriculum but students are not enrolling to the degree that they are offered due to unseen benefits, insufficient preparation in earlier grades, or barriers such as pre-enrollment requirements and exam fees.

With regard to vocational classes, results suggest that students at heavily non-white schools are more likely to be enrolled in vocational classes. This relationship is slightly strengthened and is made significant when introducing the controls in model 2. The change in regression coefficients speaks to the fact that the concentration of predominantly minority schools in urban areas, as well as the majority of them being public institutions, increases the effect of race on vocational education.

The Role of Social Class

Students at poor schools are disadvantaged in both their curricular options and course-taking behaviors. Schools with a greater percentage of students qualifying for free or reduced-price lunch have fewer opportunities to take advantage of AP classes, are less likely to enroll in

college-preparatory classes, and are more likely than their more economically advantaged peers to take vocational education classes.

Roughly half of the effect of the school's socio-economic composition on curriculum is accounted for by the type of school, geographic location of the school, and student body size. Specifically, the class effect diminishes by 50 percent for the number of AP courses offered and by 42.9 percent for the percentage of students enrolled in college-preparatory level courses. This reveals two important stories. First, poor students are disadvantaged in the rigor of curriculum available to them and their chances for college enrollment due, partly, to their disproportionate presence in public schools in either urban or rural areas. Second, such class disadvantage remains even with other indicators accounted for. Regardless of the type of school, locality, or school size, students that attend largely poor schools are less likely to have the opportunity to take AP classes and to enroll in college-preparatory classes, broadly speaking.

The effect of class on enrollment in vocational courses is more heavily explained by the other school-level indicators. The positive relationship between high poverty schools and the percentage of students taking vocational classes becomes non-significant once we account for the school's public/private status and its geographic location. That is, the disproportionate enrollment in vocational education of students at overwhelmingly poor schools is explained by the type and level of curricula offered at public schools in either urban centers or rural areas, as compared to public schools in suburban districts or private schools.

DISCUSSION and CONCLUSIONS

Previous studies have denoted how schools differ from one another in school funding, educational resources, and student body composition. This project, however, makes evident the

relations with educational curriculum as well. Schools vary both in the curricular structure of opportunity they offer to students and in the actual curricular enrollment behaviors of its students. High schools across the country vary greatly in the availability of Advanced Placement courses, an indicator of academic challenge and college preparation. The degree to which schools offer college-preparatory coursework is not random, but is tied to marked differences in racial and social class student body composition. Some of these effects stand on their own, while others are a function of ties to the public school system and urban and rural districts.

When considered together, social class has a stronger negative effect on curriculum than does race. While it is true that predominantly minority schools disproportionately have fewer students enrolled in advanced college-preparatory coursework, much of this relationship can be explained by the linkages between race and class, as well as other factors of school type and locality. The curricular disadvantage experienced by students at heavily non-white schools is more a function of their overwhelming attendance in urban schools, in the public school system, and disproportionate levels of poverty.

The relation between social class composition and curriculum is more straightforward. Even once school type and locality are controlled for, students at poor schools are unfairly both denied access to college-preparatory coursework and are channeled into vocational education more so than their more advantaged peers. There are possible explanations for these effects. First, the socio-economic character of a school is more determinant of levels of school funding than is race, as through property taxes, funding is linked to the economic culture of a school district. Secondly, race is a more visible feature than class in social and political life. As such, social and educational policy has focused more often and more explicitly to variations in opportunity structures across schools with regard to race. Class, on the other hand, is less

recognizable unless at the extremes. Also, the United States is a society that tolerates stratification, at least to a fair degree, and so poor schools have not been targeted as non-white schools have by educational policy.

The benefit of using the secondary variables of school type and locality chosen for this project is not only do they control for mediating relationships, but they themselves tell a story. The analyses show a significant private school advantage. Students at private schools are much more likely than their peers at public schools to be enrolled in college-preparatory classes and to have access to college level coursework through AP classes. Also, it is highly unlikely that students at private schools will be channeled into vocational classes.

With regard to locality, students in rural areas are the most disadvantaged by curriculum. They are significantly less likely of having the opportunity to enroll in AP classes and to enroll in college-preparatory classes more broadly. Students at these schools are the most likely of all U.S. students to take vocational classes. Some might argue that young people in rural areas might benefit from vocational education and so these trends should not be considered problematic. Certainly, there are many students in rural communities that in fact would benefit from vocational coursework, such as agricultural or technical training. However, not all students in these areas desire to enter such fields and thus, the structure of opportunity through college-preparatory classes ought to at least be in place. There are capable students in rural areas, just as in the suburbs, and college-preparatory classes would benefit their academic pursuit of medical, engineering, and teaching jobs, to name but a few.

The significant differentiation by race and class that this study finds should not only be of interest to social scientists, but to educators and policy professionals. The importance of these findings makes evident the need for further research. This study opens doors to the possibilities

of future analyses of curricular differentiation across schools. A better understanding of the supplementary means of engaging students and preparing them for college such as SAT preparation and school relationships with college representatives, for example, would be useful in framing the entire school culture in its efforts of channeling students towards one path or another. Future research might also benefit from better indicators of college-preparatory enrollment, as the variable used in this study broadly encompassed coursework as categorized by the principle.

The type and rigor of the high school curriculum affects immediate academic achievement as well as life outcomes after graduation (Oakes 1983; Natriello, Pallas, and Alexander 1989; Jencks and Brown 1975). This study has shown that there is not only great variation in the curricular availability and course-taking behaviors of students, but that this variation is related to differences in the racial and socio-economic composition of schools. The most disadvantaged students are those at heavily poor schools, particularly those in rural areas and in public school systems, and those at heavily non-white schools when locality and school type are controlled for. The disadvantages set up through curriculum in these schools have meaningful life-long implications for these students by limiting educational opportunity early in life.

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